

From: Mohan Thadani
To: INTERNET:awharrison@stpegs.com; Internet:smhead@stpegs.com
Date: 6/19/2007 4:54:33 PM
Subject: Request for Additional Information RE: AST

Scott/Wayne:

The NRC staff has reviewed your request for alternate source term amendments and has identified a need for the following partial request for additional information. Please review the RAI and provide the schedule of your response. Should you require a formal RAI letter, I will promptly provide the same.

Thank you for your cooperation.

Mohan

REQUEST FOR ADDITIONAL INFORMATION BY THE OFFICE
OF NUCLEAR REACTOR REGULATION
PROPOSED LICENSE AMENDMENT FOR ALTERNATE
RADIOLOGICAL SOURCE TERM (AST) METHODOLOGY
SOUTH TEXAS PROJECT UNITS 1 AND 2
DOCKET NUMBERS 50-498 AND 50-499

The licensee determined the post-LOCA containment sump water pH using the STARpH computer code. Since the U.S. Nuclear Regulatory Commission staff did not have an opportunity to review this code, the information needed for performing the evaluation of the licensee's program has to be obtained from the description in the submittal, supplemented by the following request for additional information (RAI) prepared by the staff.

RAI 1 In the methodology for determining the post LOCA suppression pool water pH, the licensee employed a two step procedure. In the first step no buffering action of trisodium phosphate (TSP) is assumed. Without the buffer the pH of the suppression pool water will monotonically decrease and eventually will drop below a value of 7. In the second step, the licensee calculated the value of pH at 30 days after a LOCA including buffering action of TSP. When this pH value at 30 days after a LOCA is equal to or higher than 7, because of its monotonic decrease as a function time, all of the pH values for time shorter than 30 days must also be higher than 7. However, this method does not allow calculation of the actual pH values at different time intervals between zero and 30 days after a LOCA. Describe how the values of pH listed in Table 4.3-3 were calculated.

RAI 2 Describe how the nitric acid in the post- LOCA containment environment was determined.

RAI 3 The equation on page 108 of Appendix 1 was developed based on the methodology described in NUREG/CR-5950 and was used in the STARpH code for determining the amount of hydrochloric acid (HCl) generated in the sump water during the 30 day period after a LOCA . However, in their review the staff found that the amount of HCl calculated by this equation is insignificantly small and would not provide enough hydrogen ions to produce the values shown in Table 4.3-3. Justify this discrepancy.

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From: Mohan Thadani

Created By: MCT@nrc.gov

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STPEGS.COM

awharrison (INTERNET:awharrison@stpegs.com)
smhead (Internet:smhead@stpegs.com)

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